

1 (Amended) A method of establishing a routing path in a distributed packet-based network for packet delivery to a destination node within the same packet-based subnet, said destination node having a destination node address, wherein a first address for delivery of a plurality of packets is assigned to a wireless device in said subnet, said first address utilized when said wireless device is attached to said packet-based network through a base station included within a first domain including a set of identified nodes, and wherein a home agent utilizes a second address for said wireless device when said wireless device is attached to the packet-based network through a base station excluded from said first domain, said method comprising the steps of:

launching a path setup message from said destination node;

receiving said path setup message over a first interface at a first router;

and

creating a first routing table entry for a first routing table, said first routing table entry corresponding said destination node address to said first interface,

wherein a packet, subsequently received at said first router and having said destination node address as a packet header destination address, is forwarded from said first router over said first interface after said first router associates said destination node address with said first routing table entry, and

forwarding a handoff update path setup message from a second wireless base station to a first wireless base station including said first router if said wireless device is handed off from said first wireless base station to said second wireless base station, said handoff update path setup message used to alter routing table entries for selected routers of said subnet, wherein said first address for said wireless device continues to be utilized if said second base station is within the same subnet.

- 1 2. The method in accordance with claim 1 wherein said destination
- 2 node is a wireless device.

1 3. The method in accordance with claim 2 wherein said first router is  
2 incorporated within a first wireless base station.

1 4. Cancelled.

1 5. (Amended) The method in accordance with claim 1 wherein said  
2 plurality of subnet routers include at least said first wireless base station and said  
3 second wireless base station.

1 6. (Amended) The method in accordance with claim 1 wherein said  
2 handoff update path setup message is initiated from said wireless device.

1 7. (Twice Amended) The method in accordance with claim 3  
2 wherein said wireless device is able to simultaneously tune to, and receive  
3 packets from, greater than one base station.

1 8. The method in accordance with claim 7 wherein said wireless  
2 device is a CDMA device.

1 9. The method in accordance with claim 1 wherein said packet-based  
2 subnet is an Internet Protocol subnet.

1 10. (Twice Amended) The method in accordance with claim 1 further  
2 comprising the steps of:

3 forwarding said path setup message to a next router, said next router  
4 receiving said path setup message over a first interface at said next router;

5 creating a next routing table entry for a next routing table, said next  
6 routing table entry corresponding said destination node address to said first  
7 interface at said next router; and

BB 8 sending a path setup message acknowledgment to said destination node  
9 address if said next router is a subnet root router.

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1 11. The method in accordance with claim 10 further comprising the  
2 step of:  
3 repeating said steps of forwarding and creating a next routing table entry if  
4 said next router is not said subnet root router.

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Subnet  
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1 12. (Twice Amended) The method in accordance with claim 1 further  
2 comprising the step of:  
3 maintaining said first routing table entry as a soft state in said first router,  
4 said first routing table entry overwritten with a default entry if a refresh path setup  
5 message is not received at said router within a specified period of time.

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1 13. (Amended) A packet router having a routing table adapted to  
2 maintain a plurality of routing table entries for a distributed packet-based network  
3 for packet delivery to a destination node within the same packet-based subnet  
4 said destination node having a destination node address, wherein a first address  
5 for delivery of a plurality of packets is assigned to a wireless device in said  
6 subnet, said first address utilized when said wireless device is attached to said  
7 packet-based network through a base station included within a first domain  
8 including a set of identified nodes, and wherein a home agent utilizes a second  
9 address for said wireless device when said wireless device is attached to the  
10 packet-based network through a base station excluded from said first domain,  
11 said packet router comprising:

12 means for receiving a path setup message over a first interface, said path  
13 setup message including a field defining a destination address;

14 means, responsive to receiving said destination address, for generating a  
15 routing table entry corresponding packets arriving at said packet router and

16 having said destination address as a packet header destination address to said  
17 first interface;

18 means for receiving at least one packet having said destination address  
19 as said packet header destination address;

20 means for performing a lookup of said routing table entry having said  
21 destination address and as said packet header destination address from said  
22 plurality of routing table entries;

23 means, responsive to said lookup, for forwarding said at least one packet  
24 over said first interface

25 wherein a handoff update path setup message from a second wireless  
26 base station to said router is received if said wireless device is handed off from  
27 said router to said second wireless base station, said handoff update path setup  
28 message used to alter routing table entries for selected routers of said subnet,  
29 wherein said first address for said wireless device continues to be utilized if said  
30 second base station is within the same subnet.

1 14. The packet router in accordance with claim 13 wherein said  
2 destination address corresponds to a wireless device.

1 15. The packet router in accordance with claim 13 wherein said router  
2 is incorporated in a wireless base station.

1 16. The packet router in accordance with claim 13 wherein said packet  
2 router is an Internet Protocol router.

1 17. The packet router in accordance with claim 13 wherein said path  
2 ~~setup message is a power up path setup message.~~

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18. The packet router in accordance with claim 13 wherein said path setup message is a handoff path setup message.

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19. The packet router in accordance with claim 13 wherein said path setup message is a refresh path setup message.

20. (Amended) A method of updating host-based routing table entries for a plurality of routers within a subnet when a mobile device is handed off from a first wireless base station to a second wireless base station, said subnet providing wireless access for said mobile device to a packet-based network, wherein a first address for delivery of a plurality of packets is assigned to a wireless device in said subnet, said first address utilized when said wireless device is attached to said packet-based network through a base station included within a first domain including a set of identified nodes, and wherein a home agent utilizes a second address for said wireless device when said wireless device is attached to the packet-based network through a base station excluded from said first domain, said method comprising the steps of:

creating a handoff path setup message at said mobile device;

routing said handoff path setup message to said first wireless base station;

relating, as a routing table entry, an address for said mobile device with an interface over which said handoff path setup message is received at said first wireless base station and each intermediate router and base station through which said handoff path setup message is routed; and

utilizing said routing table entry to forward a packet having said address for said mobile device as a packet header destination address over said interface over which said handoff path setup message is received, wherein said first address for said wireless device continues to be utilized if said second base station is within the same subnet.

Subnet  
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